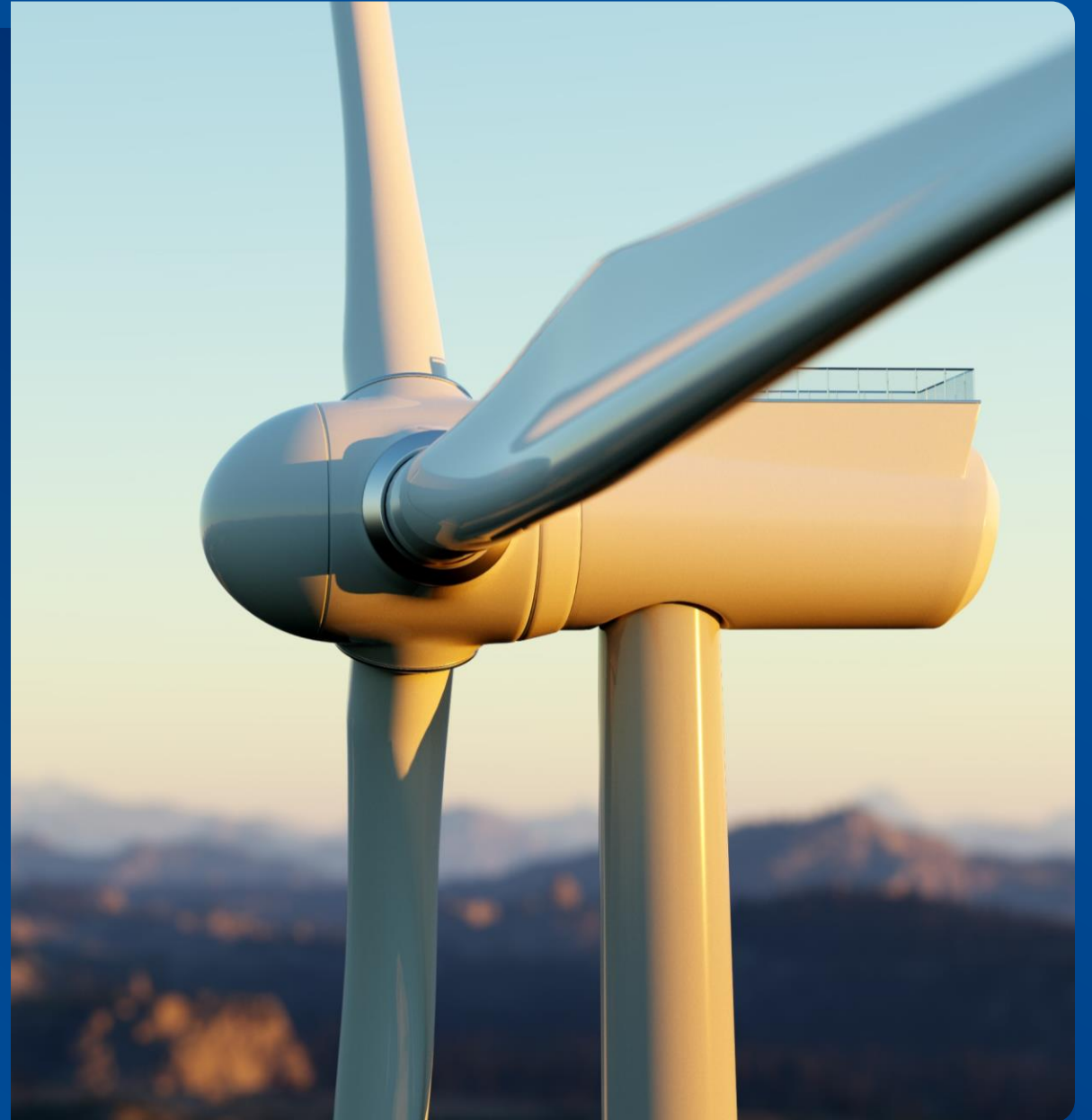


Renewable Energy Sector in the Philippines

April 24, 2024
Economy Updates
APEC-EGNRET 60 Meeting



Power Capacity and Generation Mix 2022



COAL

44.0%

12,428 MW

Installed Capacity

48.8%

11,504 MW

Dependable Capacity

59.6%

66,430 GWh

Power Generation



RENEWABLE ENERGY

29.2%

8,264 MW

Installed Capacity

30.3%

7,151 MW

Dependable Capacity

22.1%

24,684 GWh

Power Generation



OIL-BASED

13.6%

3,834 MW

Installed Capacity

12.1%

2,860 MW

Dependable Capacity

2.3%

2,519 GWh

Power Generation



NATURAL GAS

13.2%

3,732 MW

Installed Capacity

8.8%

2,081 MW

Dependable Capacity

16.0%

17,884 GWh

Power Generation

16,596 MW

PHILIPPINES

Luzon 12,113 MW

Visayas 2,316 MW

Mindanao 2,167 MW

PEAK DEMAND

28,258 MW

(Installed)

23,598 MW

(Dependable)

CAPACITY

111,516 GWh

Indigenous (42.5%)

Imported (57.5%)

RE Share (22.1%)

Fossil Share (77.9%)

GENERATION

DRAFT PEP 2023–2050

Scenarios

Reference

- 35% RE share in power generation mix by 2030
- 50% RE by 2040–2050

Clean Energy 1

High RE with Low OSW
+ Nuclear + Coal Repurposing

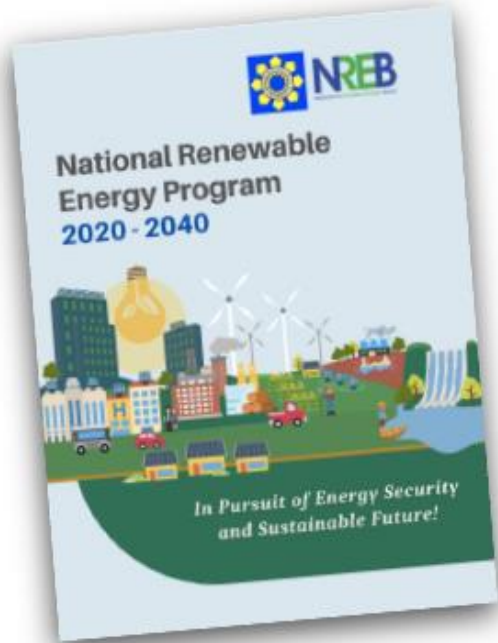
- 35% RE by 2030, 50% RE by 2040, more than 50% by 2050
- Coal repurposing
- Nuclear capacity of 1,200 MW by 2032, 2,400 MW by 2035, and 4,800 MW by 2050
- 19 GW of OSW by 2050

Clean Energy 2

High RE with High OSW
+ Nuclear + Coal Repurposing

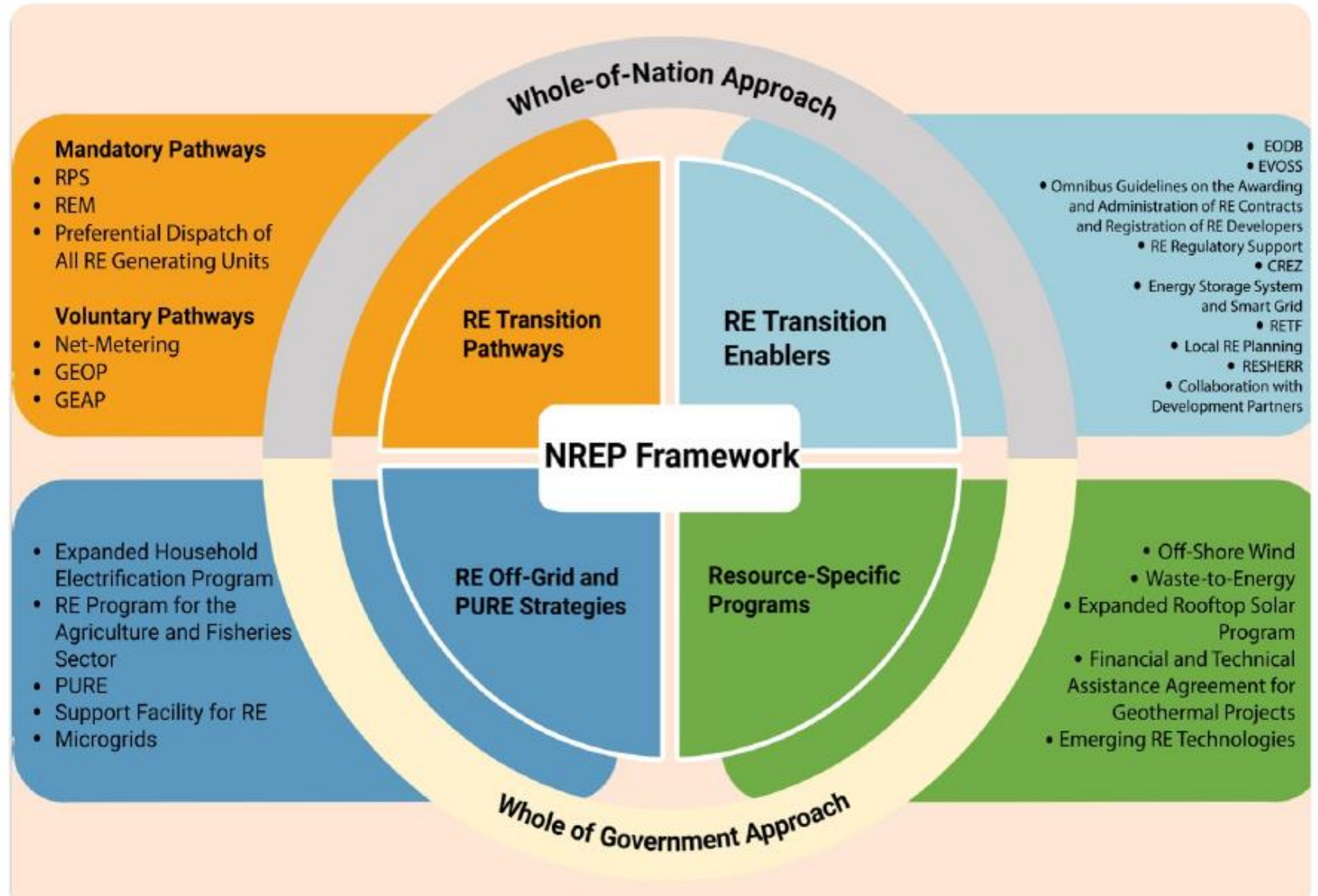
- 35% RE by 2030, 50% RE by 2040, more than 50% by 2050
- Coal repurposing
- Nuclear capacity of 1,200 MW by 2032, 2,400 MW by 2035, and 4,800 MW by 2050
- 50 GW of OSW by 2050

National Renewable Energy Program



NREP sets a target of at least 35% RE Share in the power generation mix by 2030

and aspires to increase the RE Share to 50% by 2040





RE Transition Pathways

RE Policy Mechanisms and Investment Enablers

Easing Foreign Ownership Limit in RE Investments

The foreign ownership restriction that hampers the flow of RE-sector investments has been liberalized on 15 November 2022.

Renewable Portfolio Standards

Requires all load-serving entities, both in on-grid and off-grid areas, to source or produce a specified portion of their supply from eligible RE facilities

Net-Metering Program

Allows end-users to generate electricity from RE-based systems up to 100 kW for own use and sell their excess to the grid

Preferential Dispatch of All RE Resources in the WESM

On 05 October 2022, all RE generating units are given preference in the Wholesale Electricity Spot Market dispatch schedule to ensure their maximum output injection in the grid

Renewable Energy Market

Serves as the venue for the transparent and fair trading of RE Certificates

Green Energy Option Program

Provides end-users the option to choose RE resources as their electricity source

RE Resource Development

Geothermal Energy, Offshore Wind, Waste-to-Energy, Ocean and Tidal Energy, Expanded Roof-mounted Solar Program

Green Energy Auction Program

Provides additional market for RE through a competitive electronic bidding of RE capacities

Expanded Roof-Mounted Solar Program

Open to all roof-mounted solar energy generating facilities with a capacity of above 100 kWp, intended for own-use and/or export of energy

Resulting RPS Requirements: RE Outlook 2021–2040

Installed Capacity

Particulars, in MW	2021	2025	2030	2035	2040
New Natural Gas	0	759	2,259	8,159	18,859
New Biomass	0	120	120	360	364
New Geothermal	0	0	850	1,900	2,500
New Solar	0	2,660	5,585	8,910	27,162
New Hydro	0	0	0	2,200	6,150
New Wind	0	0	6,450	13,050	16,650
Committed Capacity	2,066	7,512	7,592	7,592	7,592
Existing Capacity	22,954	22,954	22,954	22,954	22,954
Peak Demand	16,482	21,019	29,128	40,209	54,655

To reach the RE target, a total of **52,826 MW additional RE capacity is needed by 2040**, which is almost seven times than the current level at 8,264 MW.

Power Generation

Plant Type	2030		2040	
	Power Generation in Gwh	Percent Share	Power Generation in Gwh	Percent Share
Coal	84,306	45	84,491	24
Oil-based	308	0	365	0
Natural Gas	36,618	20	89,866	26
Renewable Energy	65,316	35	174,783	50
Biomass	1,455	1	2,353	1
Geothermal	23,293	12	35,321	10
Solar	10,436	6	43,686	12
Hydro	12,884	7	49,697	14
Wind	17,250	9	43,726	13
Total	186,547	100	349,505	100

The resulting power generation mix will reach the 35% and 50% RE share targets by 2030 and 2040, respectively.

Green Energy Auction Program (GEAP)

GEA 1 (June 2022)		GEA 2 (July 2023)		GEA 3 (August 2024)	
Technology	Capacity Awarded (MW)	Technology	Capacity Awarded (MW)	Technology	Capacity Targets (MW)
Hydropower	99.15	Ground-mounted Solar	1,878.982	Impounding hydro	699
Ground-mounted solar	1,490.38	Rooftop solar	9.39	Pumped-storage hydro	3,120
Onshore wind	374	Floating solar	90	Run-of-River Hydro	200
Biomass	3.4	Onshore wind	1,462.384	Geothermal	380
<i>Total</i>	<i>1,966.93</i>	<i>Total</i>	<i>3,440.756</i>	<i>Total</i>	<i>4,399</i>

Under Preparation: Undersubscribed capacity of GEA-2 and Offshore Wind

Way Forward

1 RENEWABLE PORTFOLIO STANDARDS (RPS) FOR ON-GRID AREAS

Enforcement/Monitoring

2 RENEWABLE PORTFOLIO STANDARDS (RPS) FOR OFF-GRID AREAS

Rollout implementation

3 ENHANCED NET-METERING

Roll-out to off-grid areas

4 GREEN ENERGY OPTION PROGRAM (GEOP)

Revisit policy and regulatory, intensify rollout program, collaborate with the ERC

5 GREEN ENERGY AUCTION PROGRAM (GEAP)

Continue implementation for other RE technologies

6 EXPANDED ROOF-MOUNTED SOLAR PROGRAM

7 RE RESOURCE DEVELOPMENT

Continue resource assessment and conduct of OCSP

8 REVISIONS TO OMNIBUS GUIDELINES FOR AWARD AND ADMINISTRATION OF RE CONTRACTS

9 RENEWABLE ENERGY MARKET

Proposed 4-Point Strategy for Energy Transition

1



Accelerate the Deployment of RE Projects and Clean Energy Technologies and Solutions.

2



Build and Develop a Green and Smart Transmission System

3



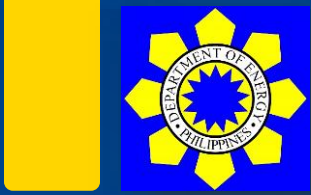
Build and Expand the necessary Port Infrastructure to Support OSW and Other Marine-based Energy Resource Development Projects.

4



Voluntary Early Decommissioning and/or Repurposing of Existing CFPPs.

The DOE shall continue and further intensify EE&C Act Implementation and EVIDA Rollout



Thank You

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